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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,381	08/31/2001	Jason N. Farmer	60988-P001US-10103485	2127

29053 7590 11/21/2003

DALLAS OFFICE OF FULBRIGHT & JAWORSKI L.L.P.
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EXAMINER

MENEFEE, JAMES A

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/945,381		FARMER ET AL.	
	Examiner		Art Unit	
	James A. Menefee		2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

In response to the amendment filed 9/29/2003, claims 1-36 are cancelled and claims 37-56 added. Claims 37-56 are pending.

Claim Objections

Claims 45 and 55 are objected to because of the following informalities: "dichroic" is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanchez-Rubino (previously cited US 6,192,062) in view of Kidorf et al. (previously cited IEEE Phot. Tech. Lett., May 1999), and further in view of Davis (US 6,418,152).

Regarding claims 37 and 47, Sanchez-Rubio discloses a system comprising a plurality of groups of multiple gain elements, a diffractive element diffracting beams from said plurality of groups of multiple gain elements toward a partially reflective component, said partially reflective component generating feedback toward said diffractive elements, said diffractive element directing feedback toward said gain elements.

Sanchez-Rubino does not disclose that the output beams are sent into a Raman amplifier having Raman gain at the wavelengths as claimed. Kidorf teaches a similar laser array for pumping a Raman gain medium, where the Raman gain is generated at the wavelengths as claimed (see Fig. 4). It would have been obvious to one skilled in the art to use the lasers for Raman amplification as they provide simple, low noise systems for use in WDM systems, as taught by Kidorf.

It is further not disclosed that a respective drive signal is provided to each group to cause each element to operate at substantially the same power. Davis discloses that the drive current sent to each group may be identical or varied (Figs. 5a-b). It would have been obvious to one skilled in the art to provide the drive current as in Davis in order to provide the desired temporal profile of the output, as taught by Davis. It is inherent that in Davis's disclosure of multiple current driving schemes, that a drive signal may be provided to cause each element to operate at substantially the same power.

Regarding claims 38 and 48, the groups may be integrated on a single semiconductor element.

Regarding claims 39 and 49, it is disclosed that the spacings between the gain elements may be different. While the spacings are not explicitly as claimed, such spacings would have been made by one skilled in the art by matter of engineering design choice. It would have been obvious to one skilled in the choose such spacings to help eliminate cross-talk between the gain elements.

Regarding claims 40-42 and 50-52, Kidorf discloses the Raman gain is generated at the wavelengths as claimed.

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Regarding claims 43 and 53, it has been held that making two parts integral by the use of one piece construction is a matter of obvious engineering choice. *In re Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965); *In re Lockhart*, 190 F.2d 20, 90 USPQ 214 (CCPA 1951). In the same logical manner, to make parts that were previously integral into separate pieces would only require an obvious engineering choice. Thus to make the groups on separate semiconductor elements would have been obvious to one skilled in the art.

Regarding claims 44 and 54, there is not disclosed that there are first and second diffraction gratings. However, in applicant's specification, there is only enablement of a system with a second diffraction grating where the entire system is duplicated. It has been held that to duplicate parts for a multiplied effect is evidence of obviousness. *St. Regis Paper Co. v. Bemis Co.*, 549 F.2d 833, 193 USPQ 8, 11 (7th Cir. 1977). Thus, when the system is duplicated, then there will be two gratings.

Regarding claims 45 and 55, it is well known to use dichroic beam combiners to combine multiple beams, and it would have been obvious to one skilled in the art to use such a combiner to combine the beams of the duplicate systems as a matter of obvious engineering design choice.

Regarding claims 46 and 56, it is not disclosed that the laser system is multiplexed with another laser as claimed. However, it is well known to multiplex a number of laser systems together. It would have been obvious to one skilled in the art to multiplex the laser together with another laser as claimed so that the system may be used in systems that require multiplexed beams, for example communications systems, as is well known.

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Response to Arguments

Applicant's arguments filed 9/29/2003 have been fully considered but they are not persuasive. Applicant's arguments are based on the assertion that Sanchez-Rubio does not disclose the driving of the lasers as claimed. This argument is moot in light of the new rejection above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

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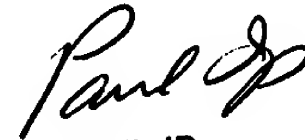
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JM

November 14, 2003



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